R E P O R T R E S U M E S

ED 018 641 VT 003 773

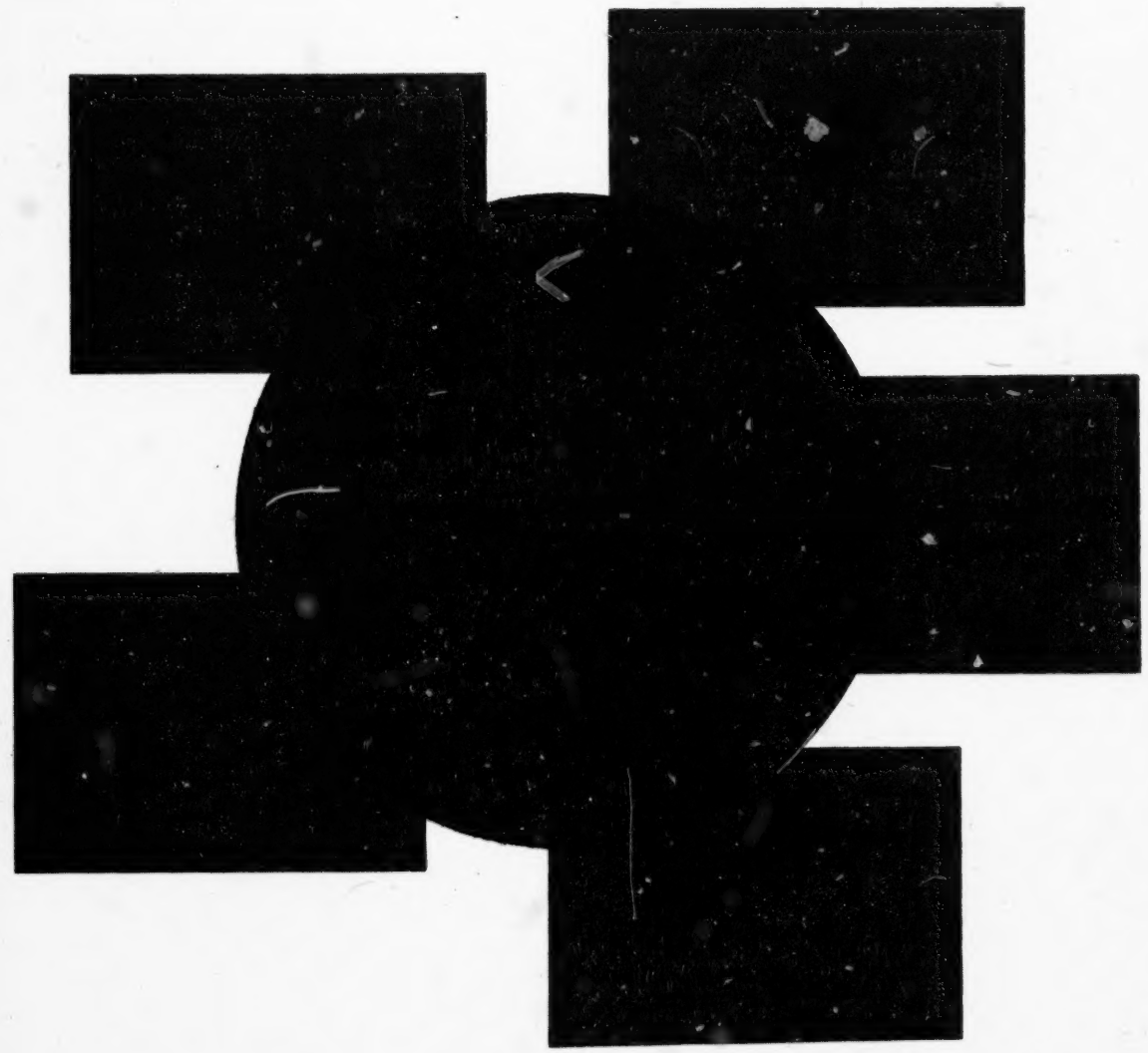
EDUCATION IN THE STATES, A PLANNING CHART BOOK.
NATIONAL COMMITTEE FOR SUPPORT OF THE PUBLIC SCHS.
PUB DATE 66

EDRS PRICE MF-$0.25 HC-$1.40 33P.

DESCRIPTORS- *EDUCATIONAL NEEDS, *EDUCATIONAL TRENDS, *PUBLIC SCHOOLS, ECONOMIC PROGRESS, *EDUCATIONAL PLANNING, EMPLOYMENT TRENDS, POPULATION TRENDS, TECHNOLOGICAL ADVANCEMENT, SCHOOL EXPANSION, EXPENDITURES,

A CONDENSED VIEW OF EDUCATION IN THE UNITED STATES IS PRESENTED IN 24 CHARTS AND BRIEF EXPLANATIONS UNDER THE HEADINGS--(1) TOWARD A TRILLION-DOLLAR ECONOMY IN 1975, (2) THE IMPORTANCE OF BEING QUALIFIED, (3) EDUCATION IS FOR ALL, AND (4) PLANNING FOR EDUCATION--THE YEARS AHEAD. THE TRILLION-DOLLAR PRODUCTION POTENTIAL IS DEPENDENT UPON TECHNOLOGICAL ADVANCES AND EXPANDED EDUCATIONAL OPPORTUNITIES. NOT ONLY WILL THE NEW JOBS BE FOR THE HIGHLY SKILLED, ALL JOBS WILL REQUIRE MORE EDUCATION. PROFESSIONAL, TECHNICAL, AND RELATED OCCUPATIONS WILL CONTINUE TO BE THE MOST RAPIDLY GROWING FIELDS. PUBLIC EDUCATION WILL NEED TO PROVIDE A COMPREHENSIVE PROGRAM FOR PERSONS OF ALL AGES AND EDUCATIONAL ATTAINMENT. THE TREND TOWARD URBANIZATION AND THE RESULTING SHIFT IN POPULATION WILL REQUIRE A REEXAMINATION OF THE RURAL-ORIENTED EDUCATIONAL SYSTEM. STATE PLANNING FOR QUALITY EDUCATION SHOULD (1) PROVIDE IMPROVED TECHNIQUES, EQUIPMENT, AND FACILITIES FOR SCHOOLS, (2) SPONSOR RESEARCH ON LEARNING, CURRICULUM, TEACHING MATERIALS, AND TEXTBOOKS, (3) EXPAND EDUCATIONAL OPPORTUNITIES, (4) IMPROVE STANDARDS OF TEACHING, (5) MEET MANPOWER NEEDS, AND (6) MODERNIZE VOCATIONAL EDUCATION. ANALYTICAL TOOLS ARE BECOMING AVAILABLE FOR PLANNING EDUCATIONAL SYSTEMS. NEW TECHNIQUES INCLUDE SYSTEMS ANALYSIS, PROGRAM BUDGETING, AND COST-EFFECTIVENESS ANALYSIS. FISCAL EXPERTS ARE STARTING TO LOOK AT EDUCATION AS A PRODUCTION PROCESS, SOMEWHAT ANALOGOUS TO INDUSTRY, HAVING INPUT, PROCESS, AND OUTPUT VARIABLES. PUBLIC EDUCATION EXPENDITURES, INCLUDING MANY PROGRAM IMPROVEMENTS, MAY REACH NEARLY $45 BILLION BY 1970. THIS DOCUMENT IS AVAILABLE FOR $1.00 FROM NATIONAL COMMITTEE FOR SUPPORT OF THE PUBLIC SCHOOLS, 1424 SIXTEENTH STREET, N.W., WASHINGTON, D.C. 20036. (WB)

n in the States



"Investment in the public school is an investment in people, and in the long run is the wisest investment any society can make."

Mrs. Agnes E. Meyer, *Chairman*
National Committee for Support of
the Public Schools

"PERMISSION TO REPRODUCE THIS COPYRIGHTED MATERIAL HAS BEEN GRANTED BY National Committee for Support of the Public Schools TO ERIC AND ORGANIZATIONS OPERATING UNDER AGREEMENTS WITH THE U.S. OFFICE OF EDUCATION. FURTHER REPRODUCTION OUTSIDE THE ERIC SYSTEM REQUIRES PERMISSION OF THE COPYRIGHT OWNER."

© 1966

National Committee for Support of the Pubiic Schools
1424 Sixteenth St., N.W. Washington, D.C. 20036

Price: $1.00 per copy. Quantity discounts available.

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL OFFICE OF EDUCATION POSITION OR POLICY.

EDUCATION IN THE STATES: A Planning Chart Book

Toward a Trillion Dollar Economy in 1975

Education, Innovation, and Investment Are the Sources of Economic Growth (4)
Advancement of Technology Requires Research Dollars and Trained Personnel (5)
Industry Goes Where Education Grows (6)

The Importance of Being Qualified

New Jobs Are for the Highly Skilled (8)
All Jobs Require More Education (9)
More Schooling Yields Higher Income (10)
Low-income Families Produce High School Dropouts (11)
High School Dropouts Lose Opportunity to Share in the Nation's Wealth (12)

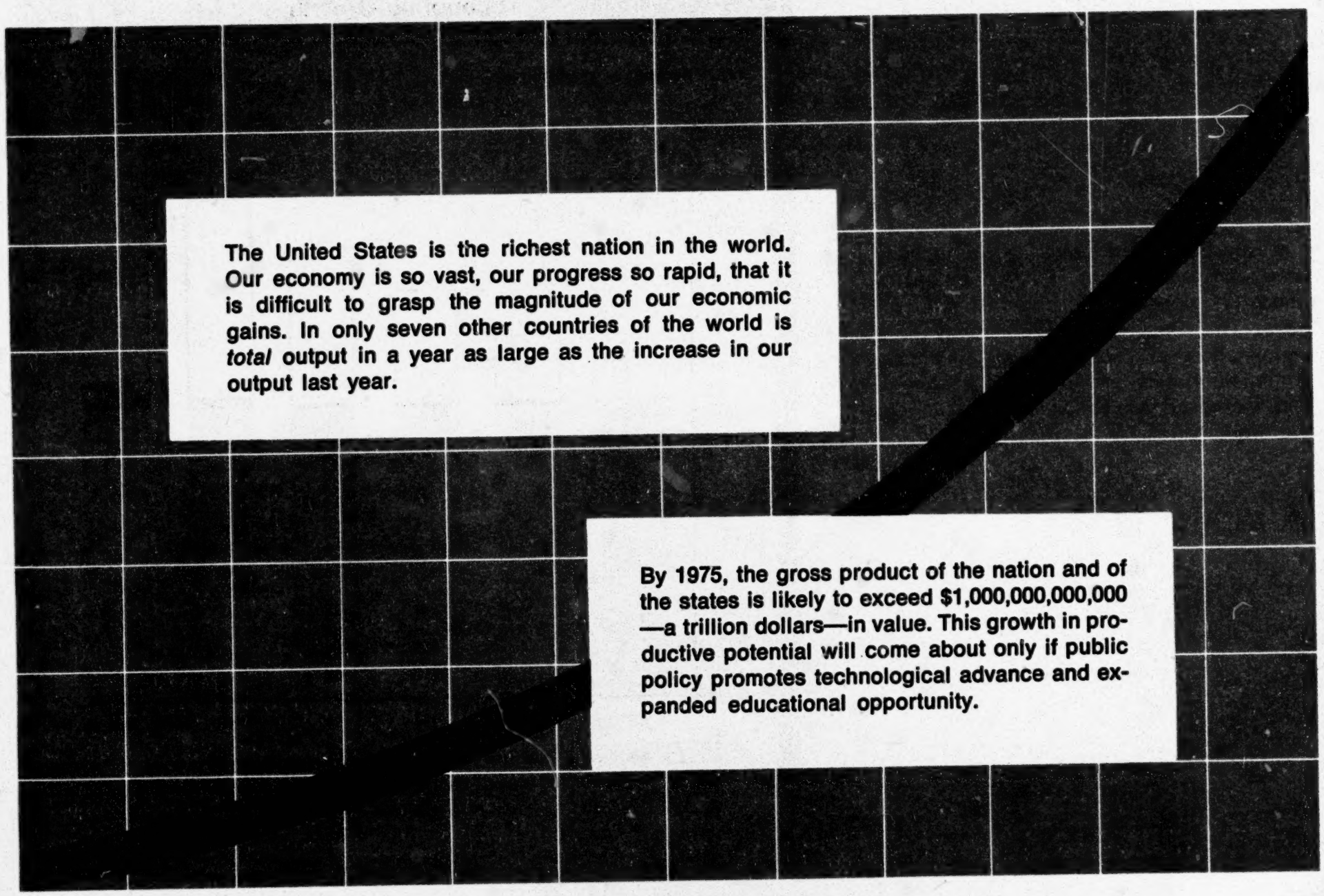
Education Is for All

In 2000, Educational Opportunities Will Be Available to All (14)
An Urban Society Requires Different Education (15)
Total Resident Population of States, 1960-1985 (16)
Enrollments Are Increasing at All Levels of Schooling (18)
Plight of the Central City School (19)
Toward Bridging the Gap between the Central City and the Suburbs (20)
Local School Expenditures from State and Local Funds (22)
State and Local Funds for Higher Education (23)

Planning for Education—The Years Ahead

Intellectual Development Is the Sum of Many State Services (25)
Total Fiscal Effort in the States, 1964-1965 (26)
State Planning for Education—Some Goals (27)
A New Way to View the Educational Process (29)
Choosing How to Spend Education Dollars: Some Options and National Costs (30)

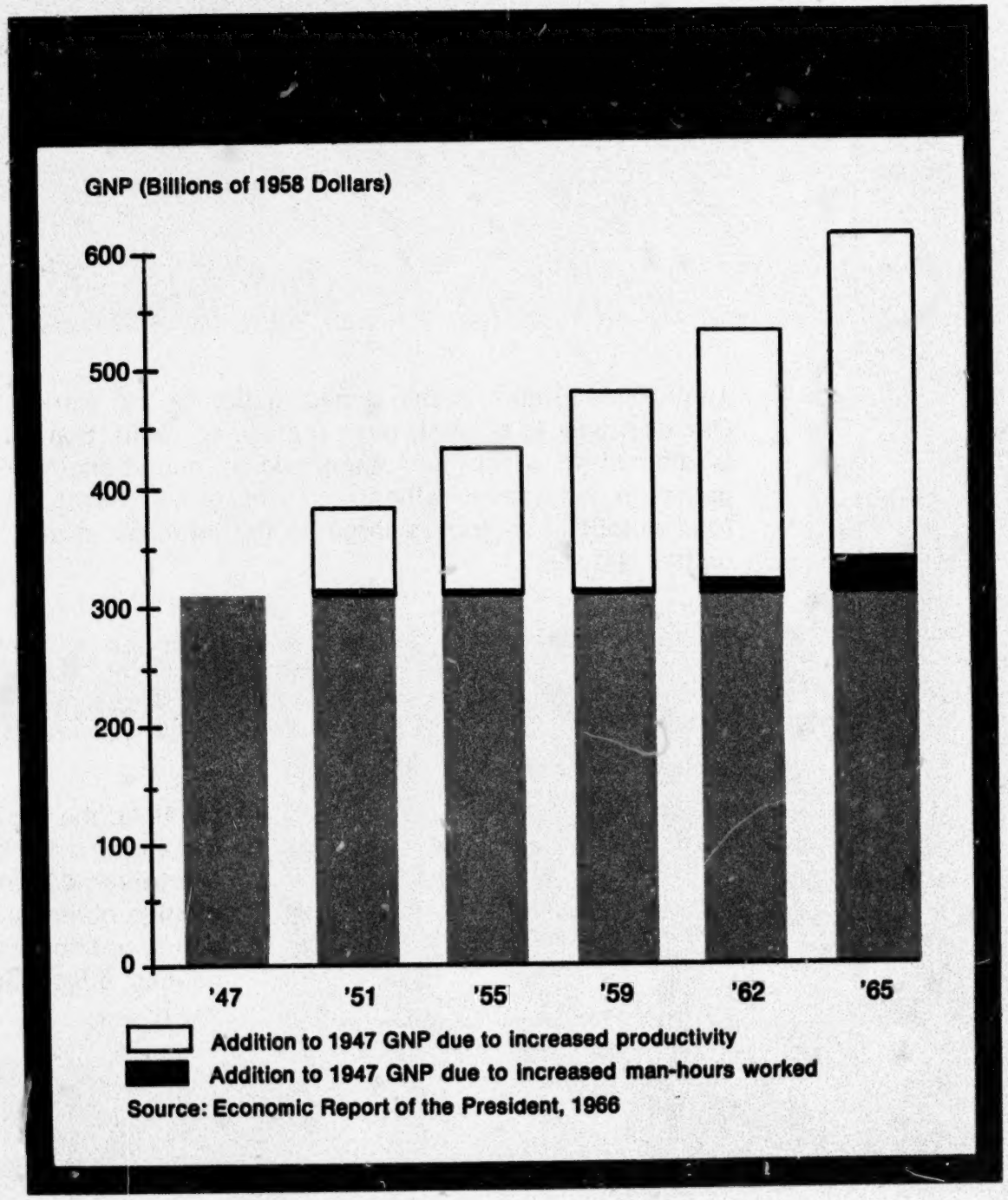
Toward a Trillion-Dollar Economy in 1975

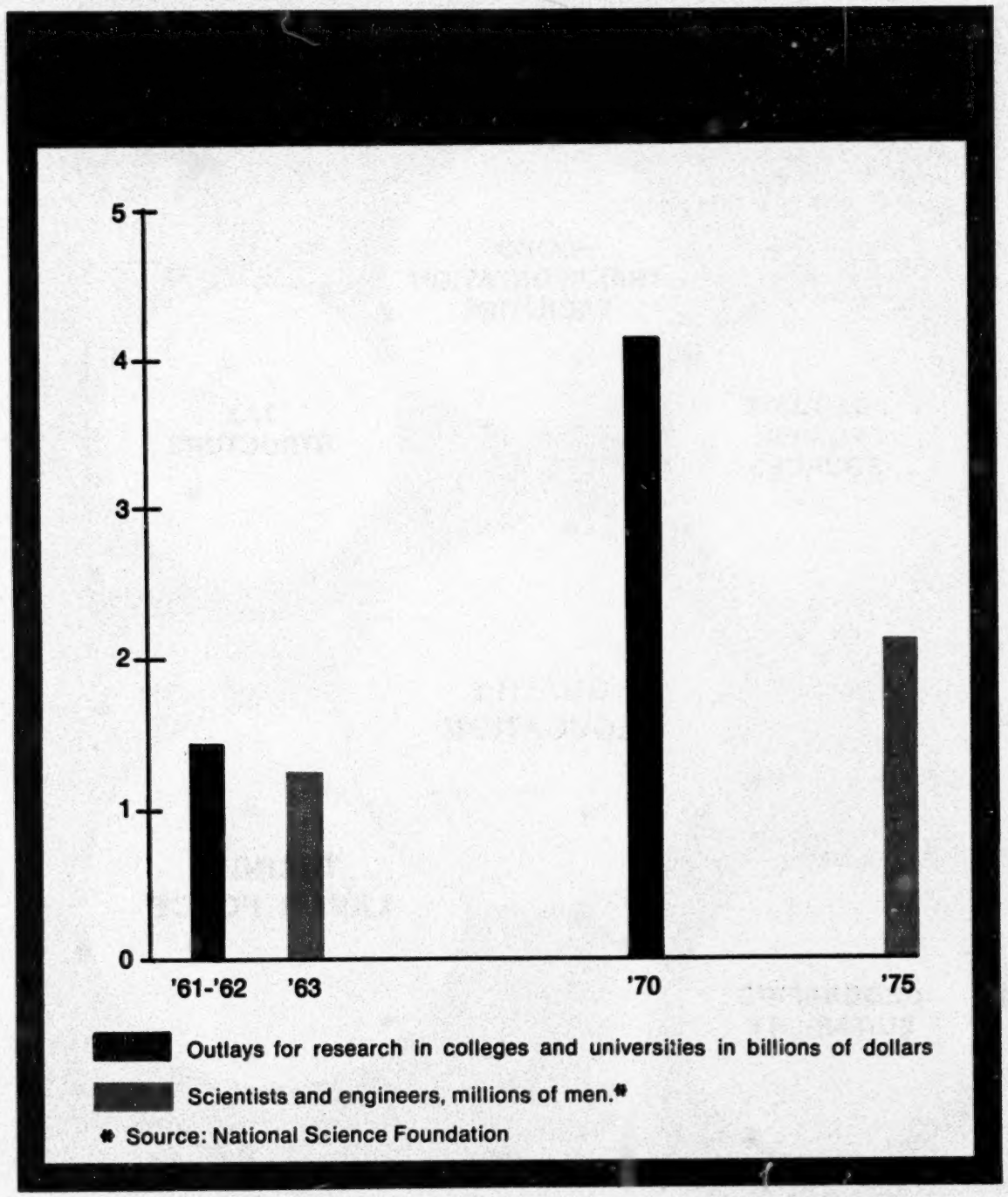


The United States is the richest nation in the world. Our economy is so vast, our progress so rapid, that it is difficult to grasp the magnitude of our economic gains. In only seven other countries of the world is *total* output in a year as large as the increase in our output last year.

By 1975, the gross product of the nation and of the states is likely to exceed $1,000,000,000,000 —a trillion dollars—in value. This growth in productive potential will come about only if public policy promotes technological advance and expanded educational opportunity.

Unprecedented gains in productivity have doubled the nation's real output of goods and services over the past two decades. This upsurge in productivity is a combination of technological advances, continued public and private investment, and increased education and training of the work force.





Spectacular accomplishments in science and engineering yield a steady flow of new production methods, new designs, new products and services. Increased expenditure for research and development and extended and deepened education promote rapid technological progress.

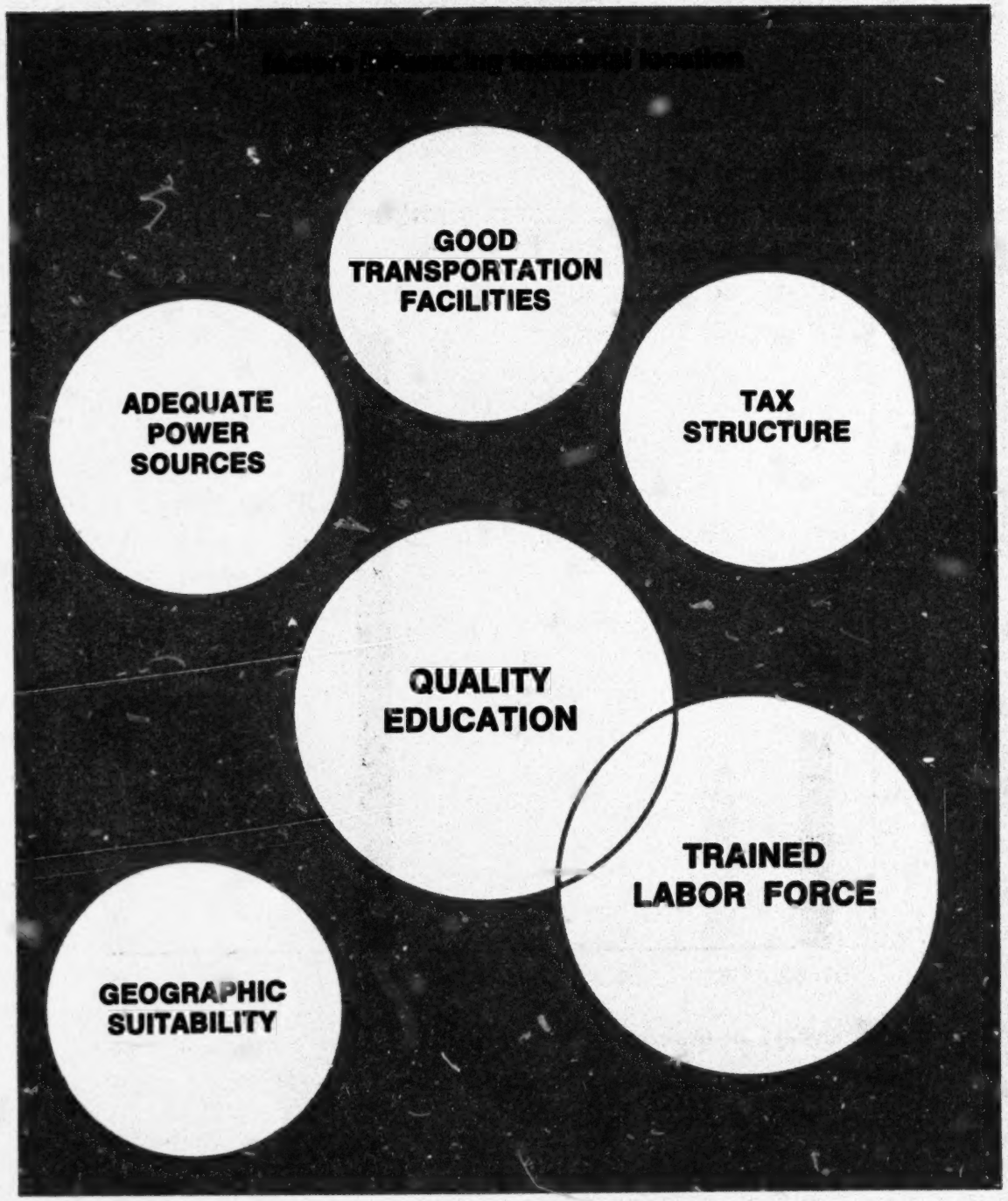
Industry Goes Where Education Grows

Whether or not investment—and thus economic growth—occurs in any one geographic area is largely dependent on the quality of educational services in that area.

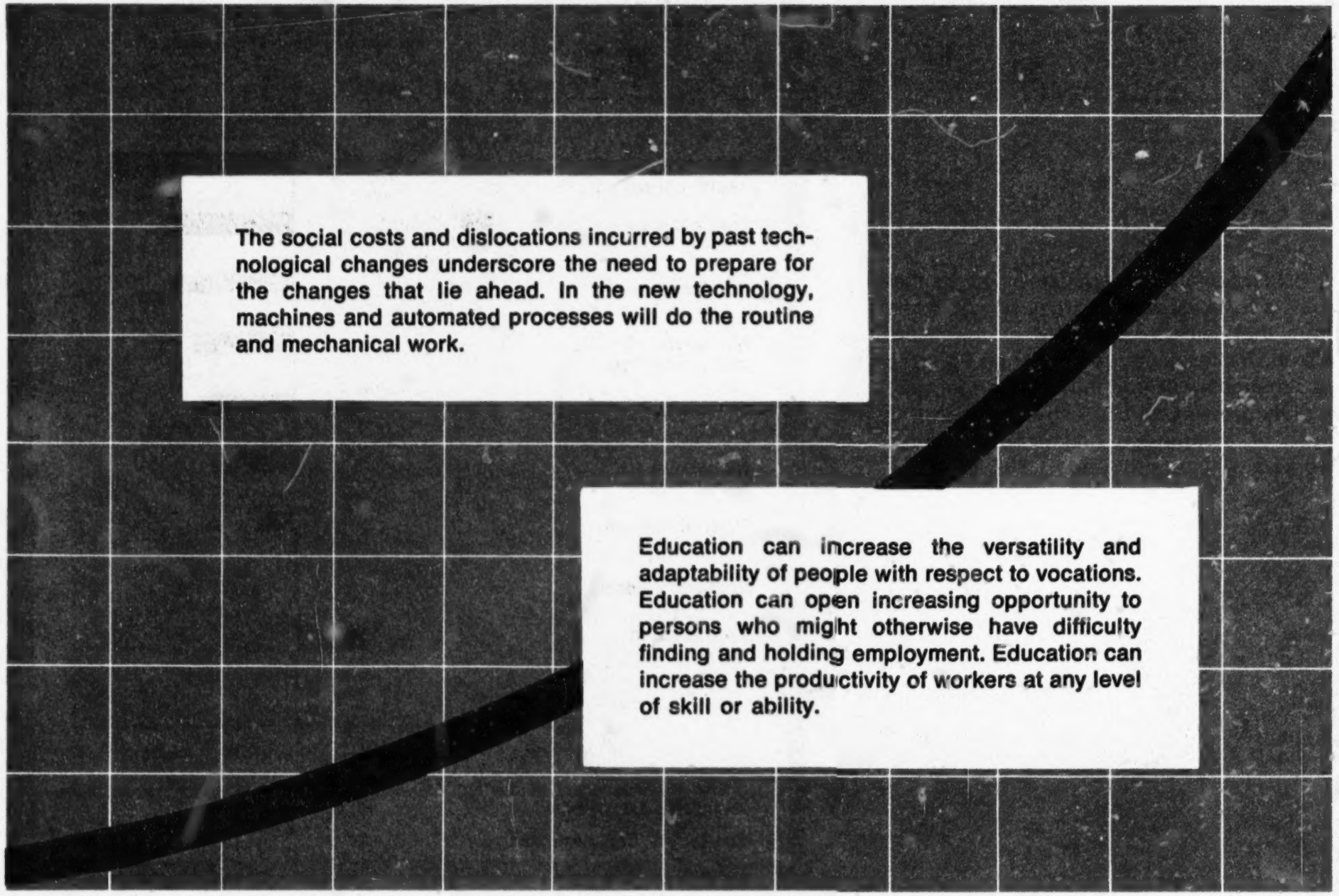
Education does more than provide a skilled labor force—it attracts industry.

Industry has shown, moreover, that it will not go, in large numbers, to areas where it is needed to provide money for better schools and colleges. It *will* go where the people have been willing to provide these things for industry *in advance*.

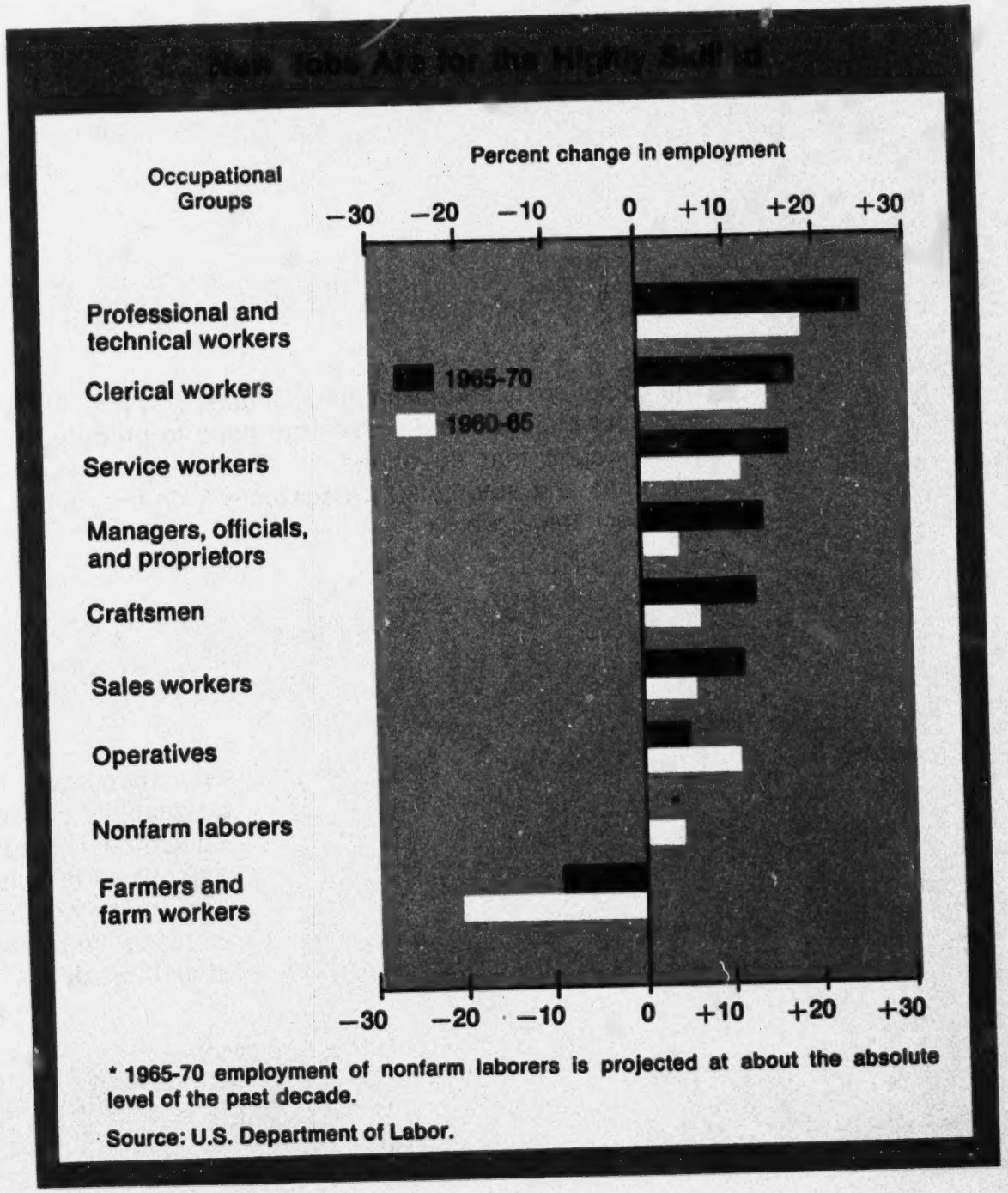
Sources: University of Maine *Bulletin*, Feb. 1953
Austin Co., Plant Location Surveys, Cleveland.



The Importance of Being Qualified

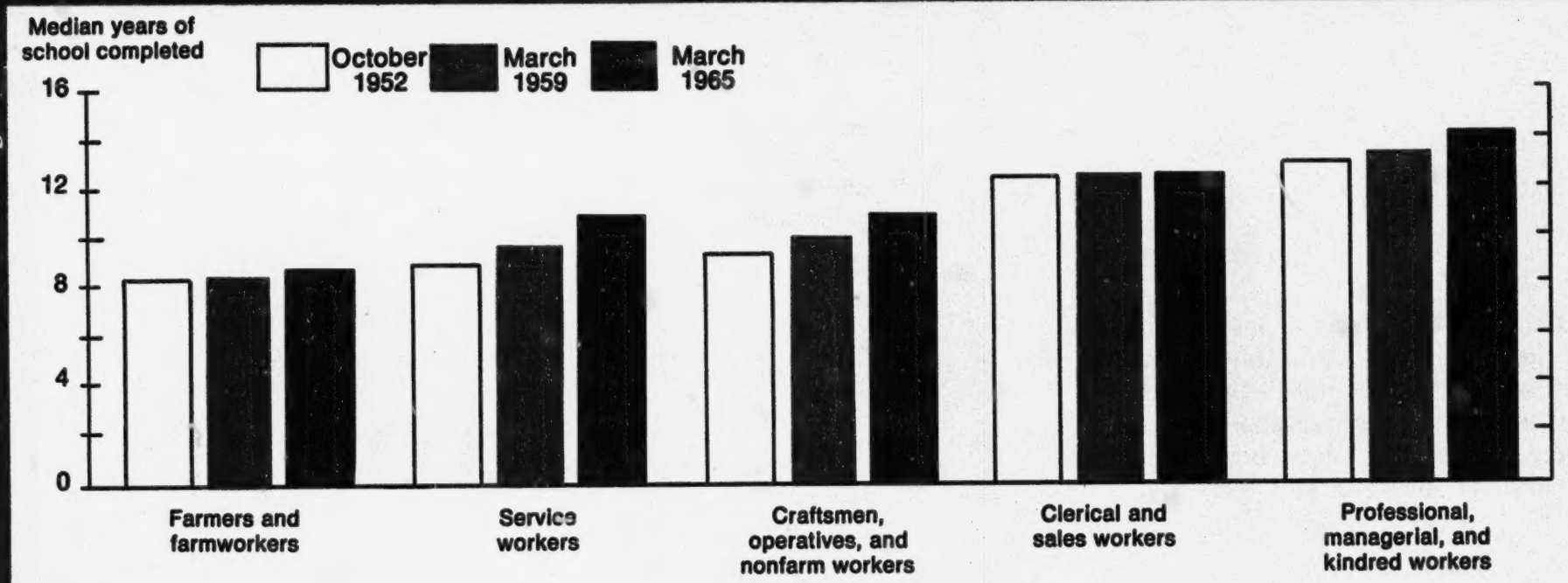

The social costs and dislocations incurred by past technological changes underscore the need to prepare for the changes that lie ahead. In the new technology, machines and automated processes will do the routine and mechanical work.
Education can increase the versatility and adaptability of people with respect to vocations. Education can open increasing opportunity to persons who might otherwise have difficulty finding and holding employment. Education can increase the productivity of workers at any level of skill or ability.

People must be educated now so that they will be qualified to get and hold the jobs that will be available in the years ahead. Professional, technical and related occupations will continue to be the most rapidly growing fields. A strong supporting base of technicians and subprofessional workers will be required.



* 1965-70 employment of nonfarm laborers is projected at about the absolute level of the past decade.

Source: U.S. Department of Labor.

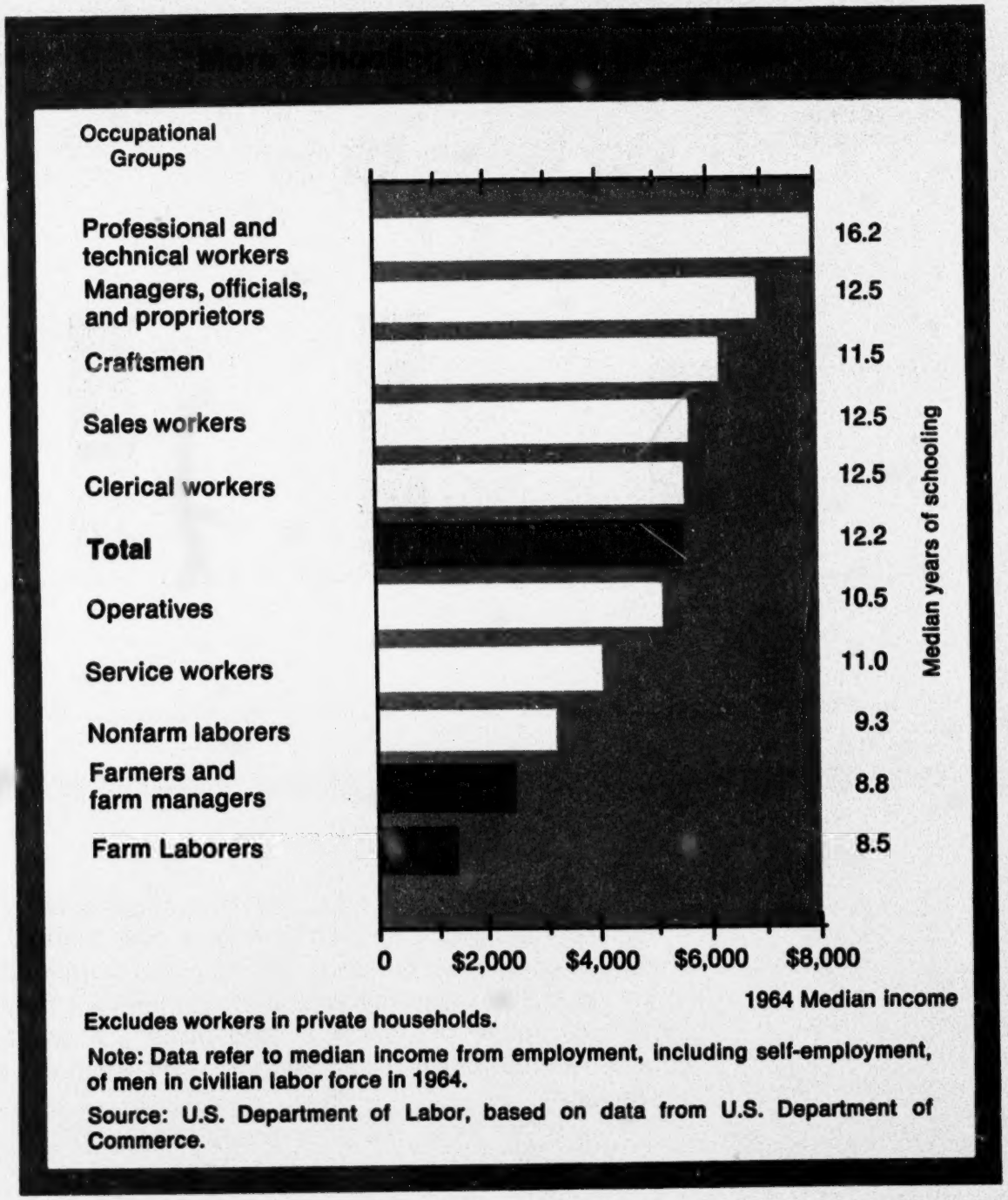


Note: Data refer to employed persons 18 years old and over in the civilian labor force.

Source: U.S. Department of Labor.

To compete on an equal basis in today's labor market, people must have more education and training than ever before. The ability to manage change—whether to keep up with new developments in a profession or to retool for a new job—requires that continuing education be available. The system of public education should provide a comprehensive program of educational opportunity for persons of all ages and of varying educational attainments.

Education is a decisive factor in economic advancement. Not only do well-trained workers earn more—the productivity of the work force increases; the state economy grows; tax bases broaden; and state services improve and expand.

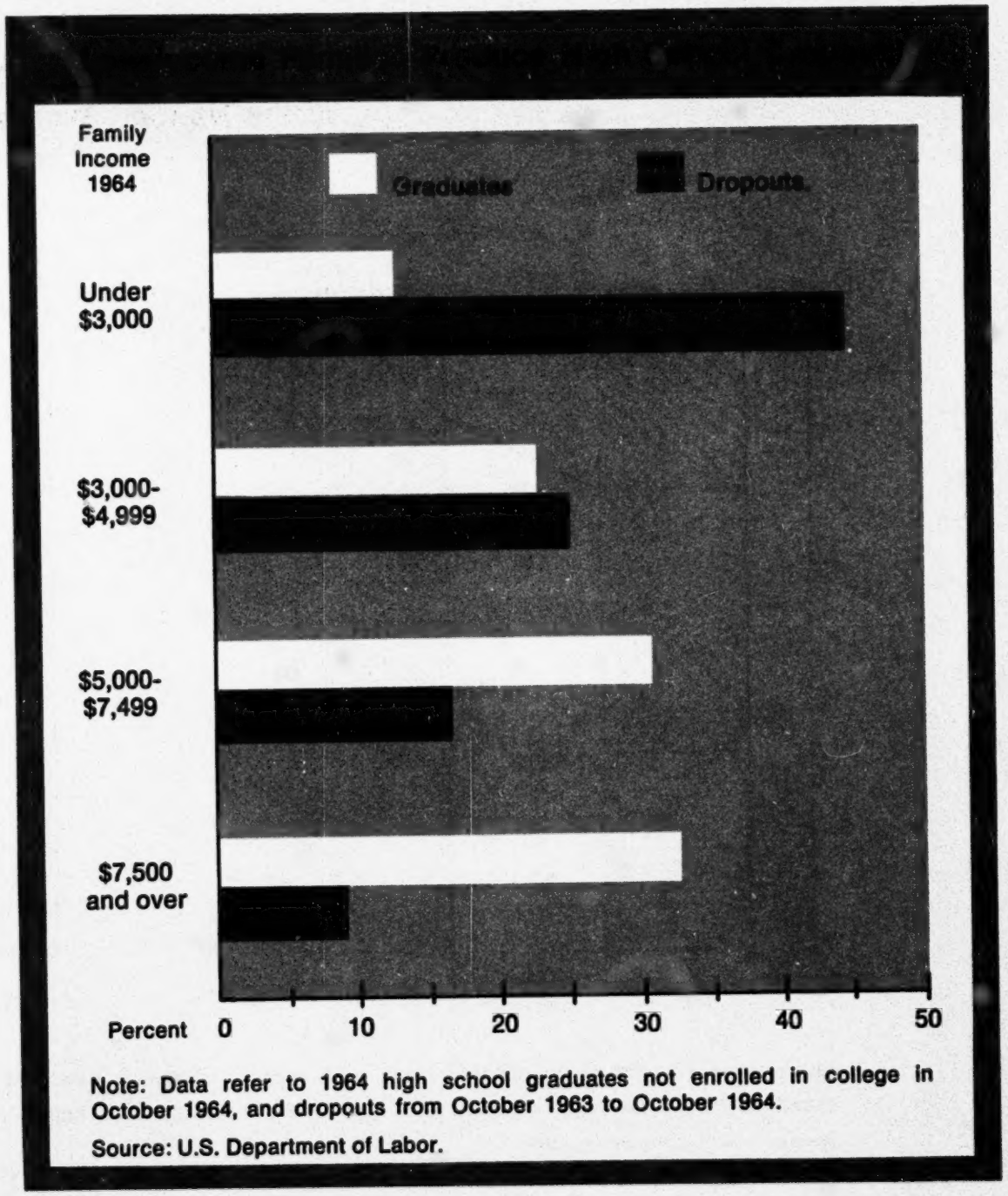


Excludes workers in private households.

Note: Data refer to median income from employment, including self-employment, of men in civilian labor force in 1964.

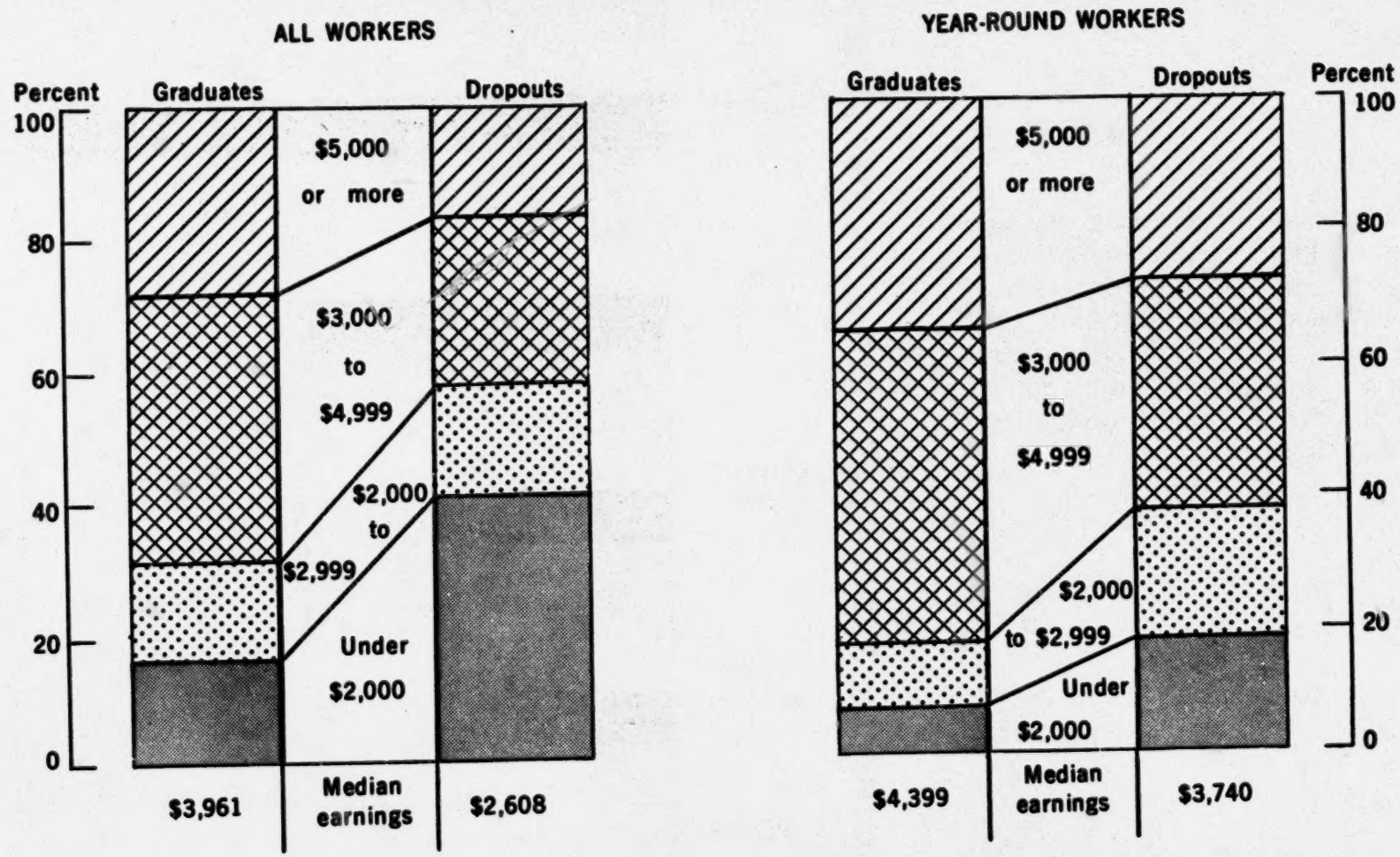
Source: U.S. Department of Labor, based on data from U.S. Department of Commerce.

Low income, low motivation, and inadequate schooling constitute the vicious cycle of poverty. High school dropouts feel powerless, negative toward education, and pass these attitudes on to their children, who in turn are likely to become dropouts. The cycle of poverty can be broken by education and training.



Note: Data refer to 1964 high school graduates not enrolled in college in October 1964, and dropouts from October 1963 to October 1964.

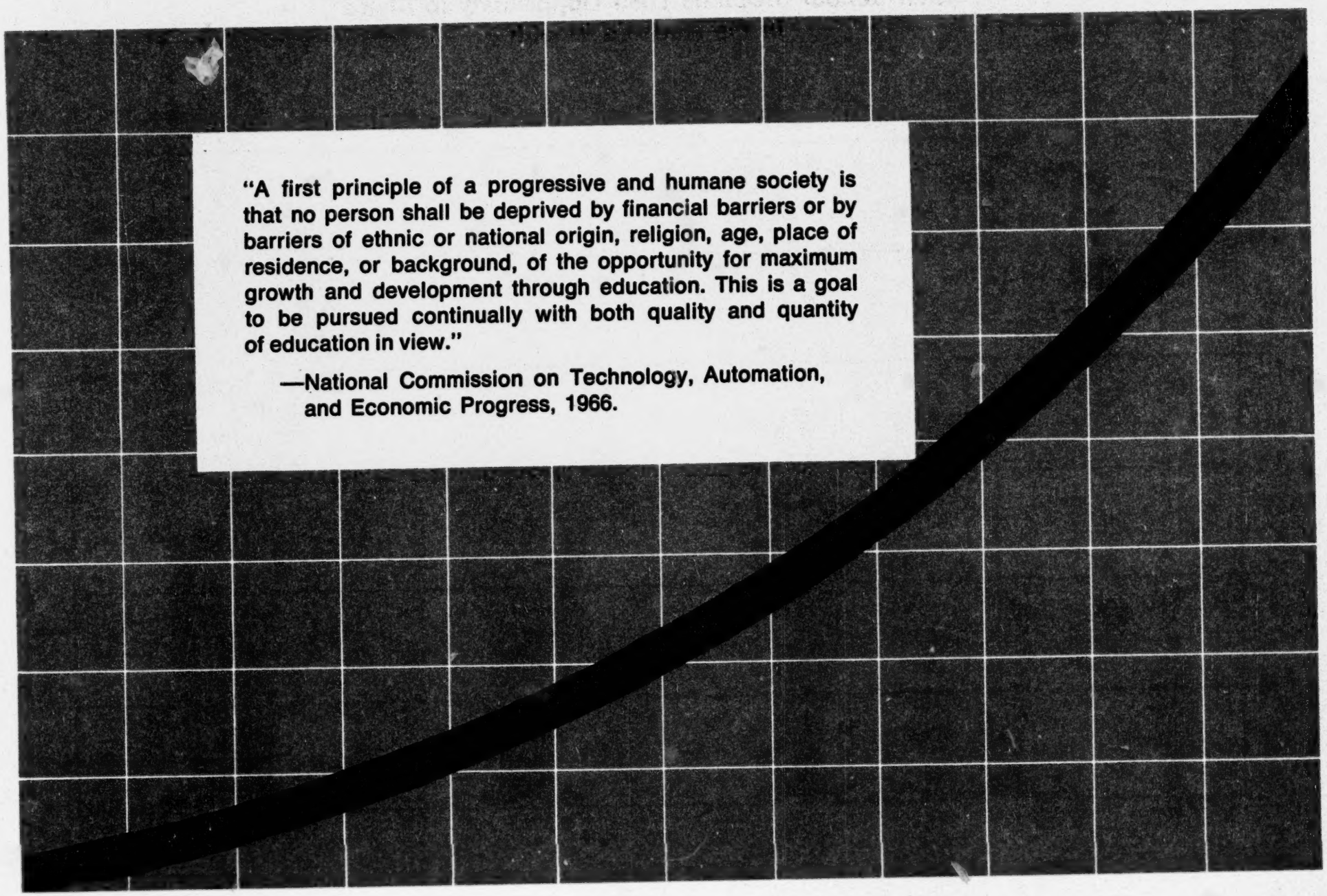
Source: U.S. Department of Labor.



Median annual earnings in 1964 for men with work experience were 50 percent greater for graduates than for dropouts. For those who worked year round, the difference was considerably lower.

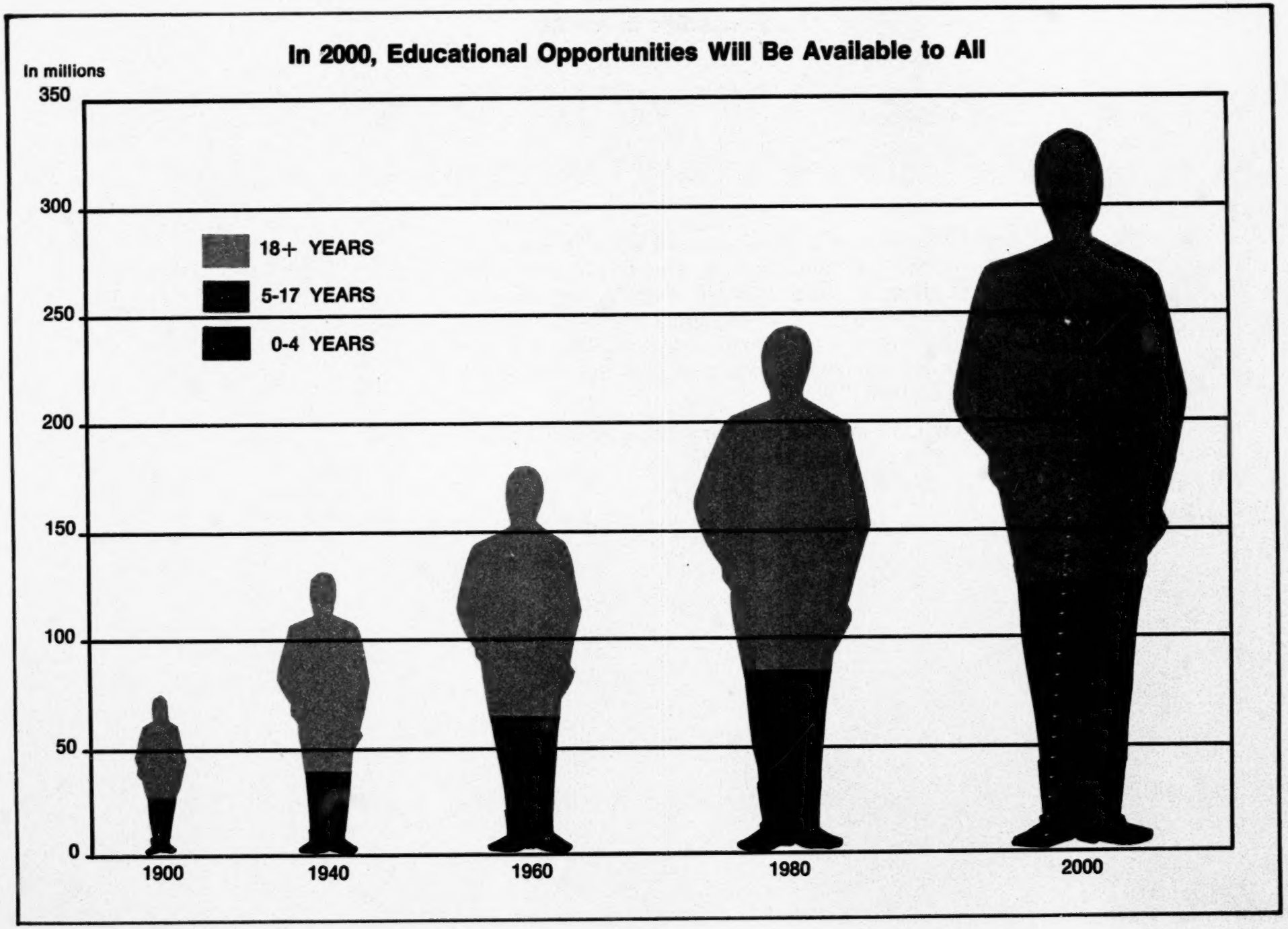
Source: U. S. Department of Labor

Education Is for All

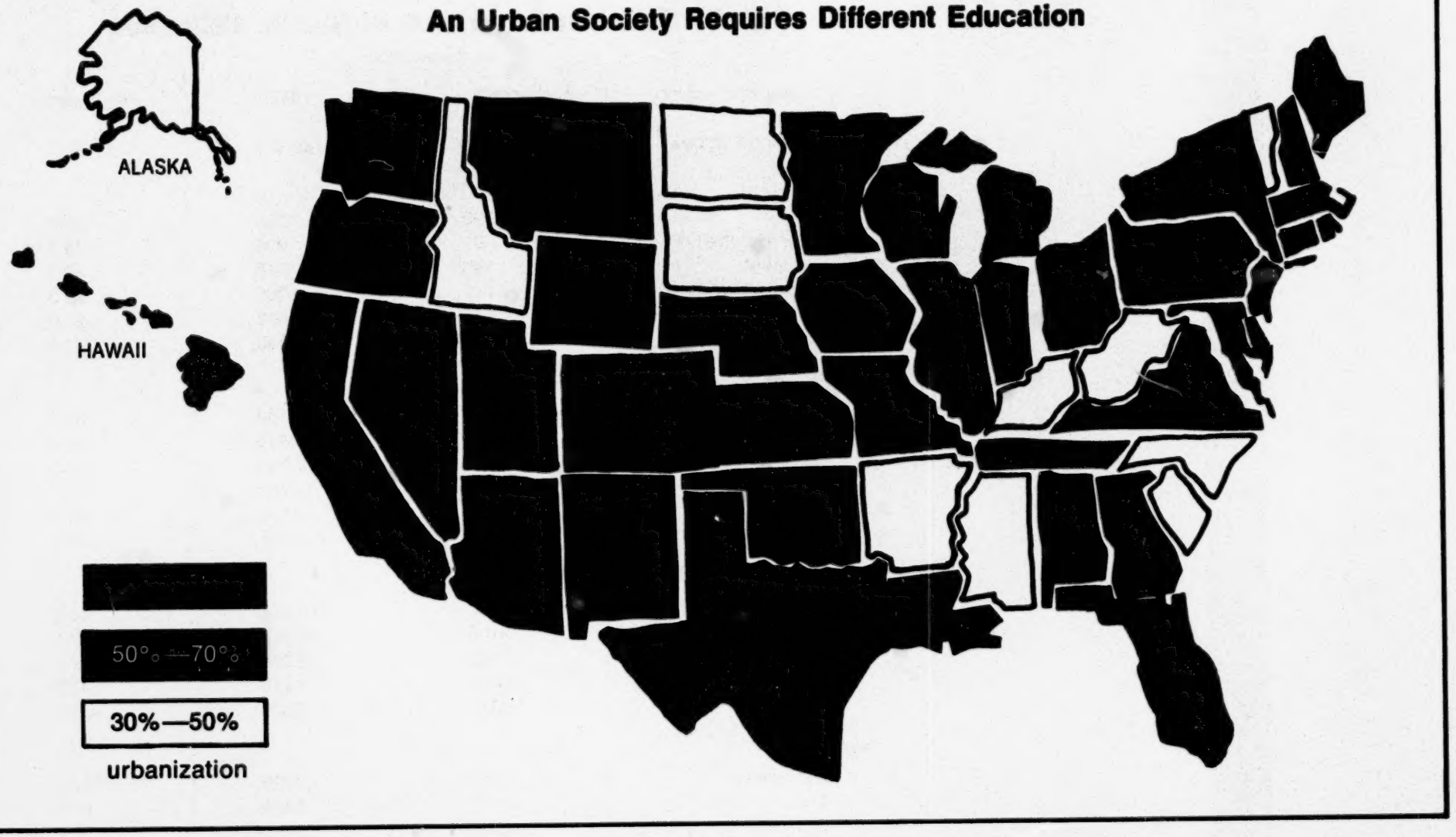


"A first principle of a progressive and humane society is that no person shall be deprived by financial barriers or by barriers of ethnic or national origin, religion, age, place of residence, or background, of the opportunity for maximum growth and development through education. This is a goal to be pursued continually with both quality and quantity of education in view."

—National Commission on Technology, Automation, and Economic Progress, 1966.


In 2000, Educational Opportunities Will Be Available to All
In millions
350
300
250
200
150
100
50
0
18+ YEARS
5-17 YEARS
0-4 YEARS
1900
1940
1960
1980
2000

An Urban Society Requires Different Education



The trend toward urbanization requires re-examination of an educational system whose roots are in rural America. Shifts in population are placing great burdens on city school staff and facilities, and require new curricular offerings.

Total Resident Population of States, 1960-1985

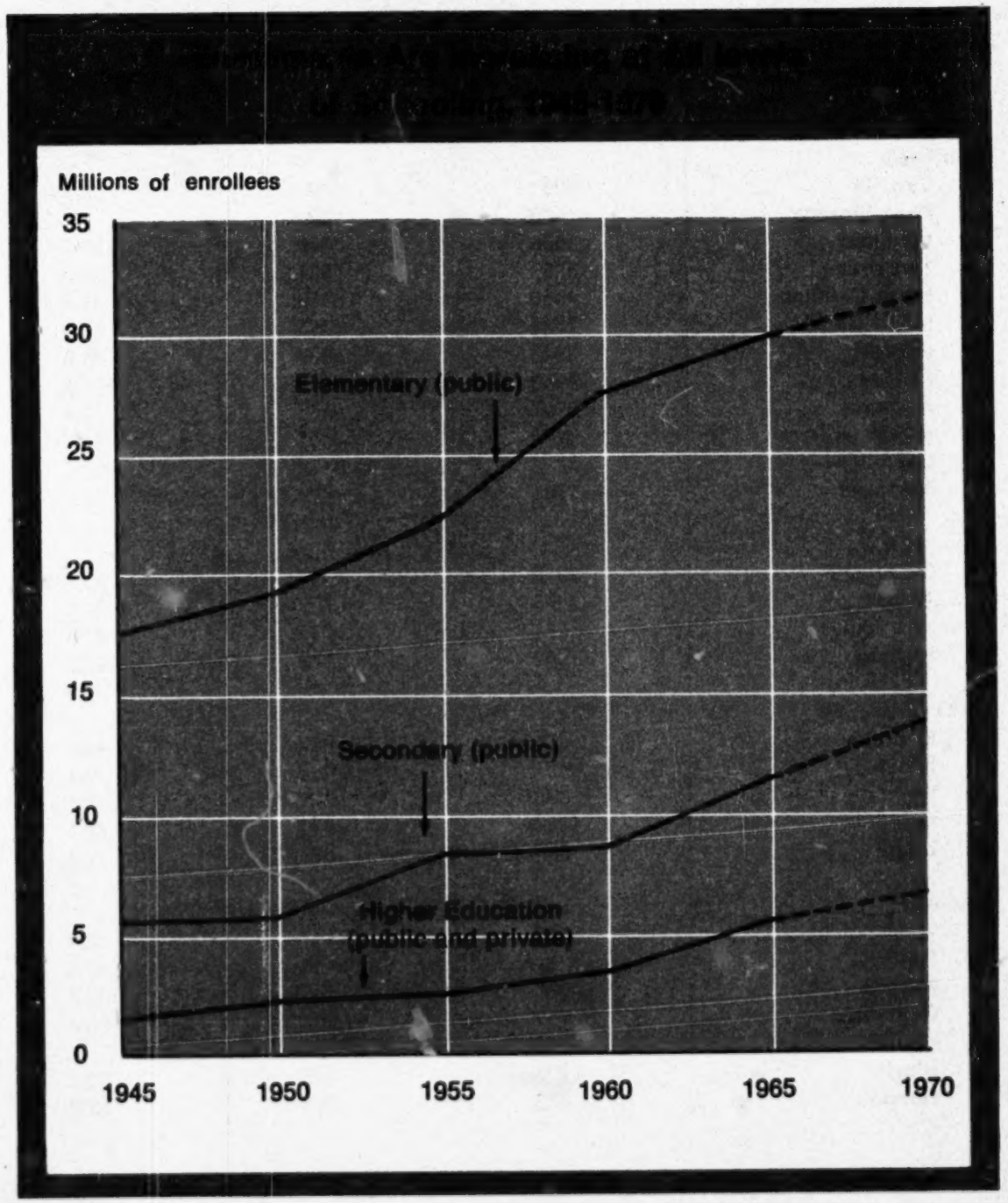
(in thousands)

State and region	1960	1985	% Increase
United States	179,323	265,575	48.1
New England			
Maine	969	1255	29.5
New Hampshire	607	906	49.3
Vermont	390	545	39.8
Massachusetts	5149	6966	35.3
Rhode Island	859	1099	27.9
Connecticut	2535	3930	55.0
Mideast			
New York	16,782	23,160	38.0
New Jersey	6067	9431	55.4
Pennsylvania	11,319	13,955	23.3
Delaware	446	750	68.0
Maryland	3101	5139	65.7
District of Columbia	764	1165	52.5
Great Lakes			
Michigan	7823	10,951	40.0
Ohio	9706	13,947	43.7
Indiana	4662	6,518	39.8
Illinois	10,081	14,218	41.0
Wisconsin	3952	5621	42.2
Plains			
Minnesota	3414	4869	42.6
Iowa	2758	3356	21.7
Missouri	4320	5551	28.5
North Dakota	632	806	27.4
South Dakota	681	895	31.5
Nebraska	1411	1817	28.7
Kansas	2179	2728	25.2

Source: U. S. Bureau of the Census

State and region	1960	1985	% Increase
Southeast			
Virginia	3967	6098	53.7
West Virginia	1860	1996	7.3
Kentucky	3038	3906	28.6
Tennessee	3567	4931	38.2
North Carolina	4556	6459	41.8
South Carolina	2383	3453	44.9
Georgia	3943	5938	50.6
Florida	4952	9962	101.2
Alabama	3267	4651	42.4
Mississippi	2178	3151	44.7
Louisiana	3257	5136	57.7
Arkansas	1786	2480	38.8
Southwest			
Oklahoma	2328	3034	30.3
Texas	9580	14,759	54.1
New Mexico	951	1730	81.9
Arizona	1302	2872	120.6
Rocky Mountain			
Montana	675	950	40.8
Idaho	667	962	44.1
Wyoming	330	479	45.1
Colorado	1754	2934	67.3
Utah	891	1578	77.1
Far West			
Washington	2853	4147	45.3
Oregon	1769	2485	40.5
Nevada	285	580	103.4
California	15,717	29,964	90.6
Alaska	226	396	75.0
Hawaii	633	963	52.2

School enrollments will continue to move upward, with the most dramatic growth in higher education. This means increased demand for qualified teachers and adequate facilities and equipment throughout the nation.



Plight of the Central City School

CITY	Current Expenditures Per Student	
	Within Central City	Outside Central City
[redacted]	$536.88	[redacted]
[redacted]	408.51	[redacted]
[redacted]	437.14	[redacted]
[redacted]	397.75	[redacted]
[redacted]	461.67	[redacted]
[redacted]	366.07	[redacted]
[redacted]	290.09	[redacted]
[redacted]	370.59	[redacted]
[redacted]	386.58	[redacted]
[redacted]	377.90	[redacted]
[redacted]	466.77	[redacted]
[redacted]	385.46	[redacted]
[redacted]	301.96	[redacted]
[redacted]	271.87	[redacted]
[redacted]	368.00	[redacted]
[redacted]	414.63	[redacted]
[redacted]	409.89	[redacted]
[redacted]	447.03	[redacted]
[redacted]	373.11	[redacted]
[redacted]	227.58	[redacted]
[redacted]	418.30	[redacted]
[redacted]	272.52	[redacted]
[redacted]	414.31	[redacted]
[redacted]	352.87	[redacted]
[redacted]	409.19	[redacted]
[redacted]	327.40	[redacted]
[redacted]	496.21	[redacted]
[redacted]	301.44	[redacted]
[redacted]	421.59	[redacted]
[redacted]	426.33	[redacted]
[redacted]	194.43	[redacted]
[redacted]	269.23	[redacted]
[redacted]	580.05	[redacted]
[redacted]	377.71	[redacted]
[redacted]	415.51	[redacted]
[redacted]	265.43	[redacted]
[redacted]	282.58	[redacted]

Source: U.S. Bureau of Census, *Census of Governments, 1962.*

Equality of educational opportunity is denied to pupils in central city schools. Expenditures per student—one measure of quality—are low in central city schools. Studies reveal that the quality of teaching also tends to be lower in schools in depressed neighborhoods.

Toward Bridging the Gap between the Central City and the Suburbs

(in millions of dollars)

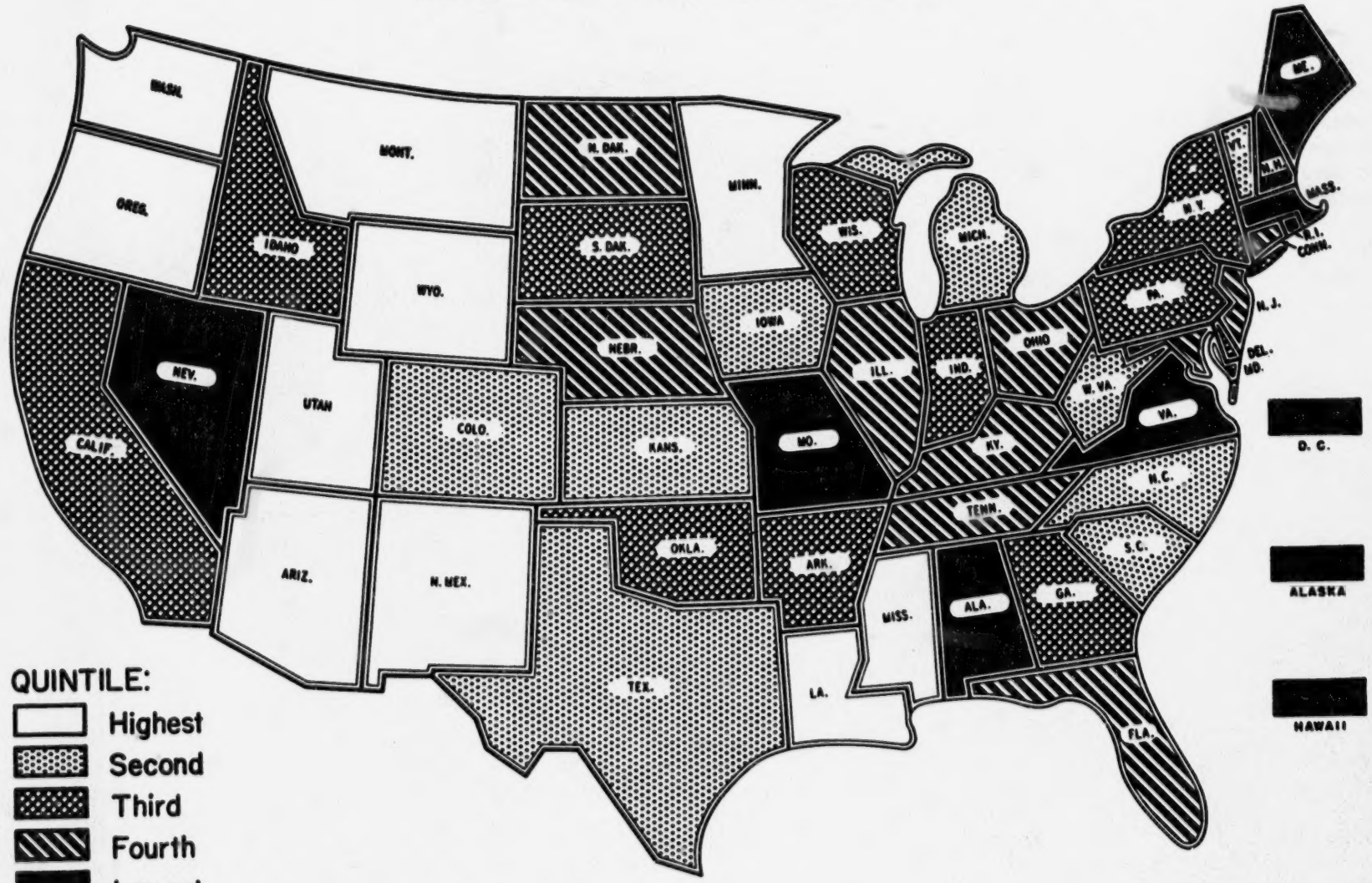
State	1965 current school expenditures	Increased expenditures needed for minimum extensions*
United States	18,851.0	3,758.3
New England		
Maine	77.9	12.7
New Hampshire	51.1	9.4
Vermont	35.4	6.0
Massachusetts	478.1	106.1
Rhode Island	72.1	15.1
Connecticut	279.1	55.4
Mideast		
New York	2107.8	504.0
New Jersey	656.0	148.2
Pennsylvania	1067.8	211.4
Delaware	53.0	10.9
Maryland	328.1	72.0
Dist. of Columbia	67.6	18.2
Great Lakes		
Michigan	863.2	165.6
Ohio	901.7	181.0
Indiana	535.2	90.1
Illinois	974.3	230.0
Wisconsin	429.4	80.5
Plains		
Minnesota	402.8	74.9
Iowa	313.8	46.7
Missouri	377.1	68.0
North Dakota	63.2	11.2
South Dakota	70.8	11.0
Nebraska	133.2	25.4
Kansas	245.4	36.8

* at 1970 prices

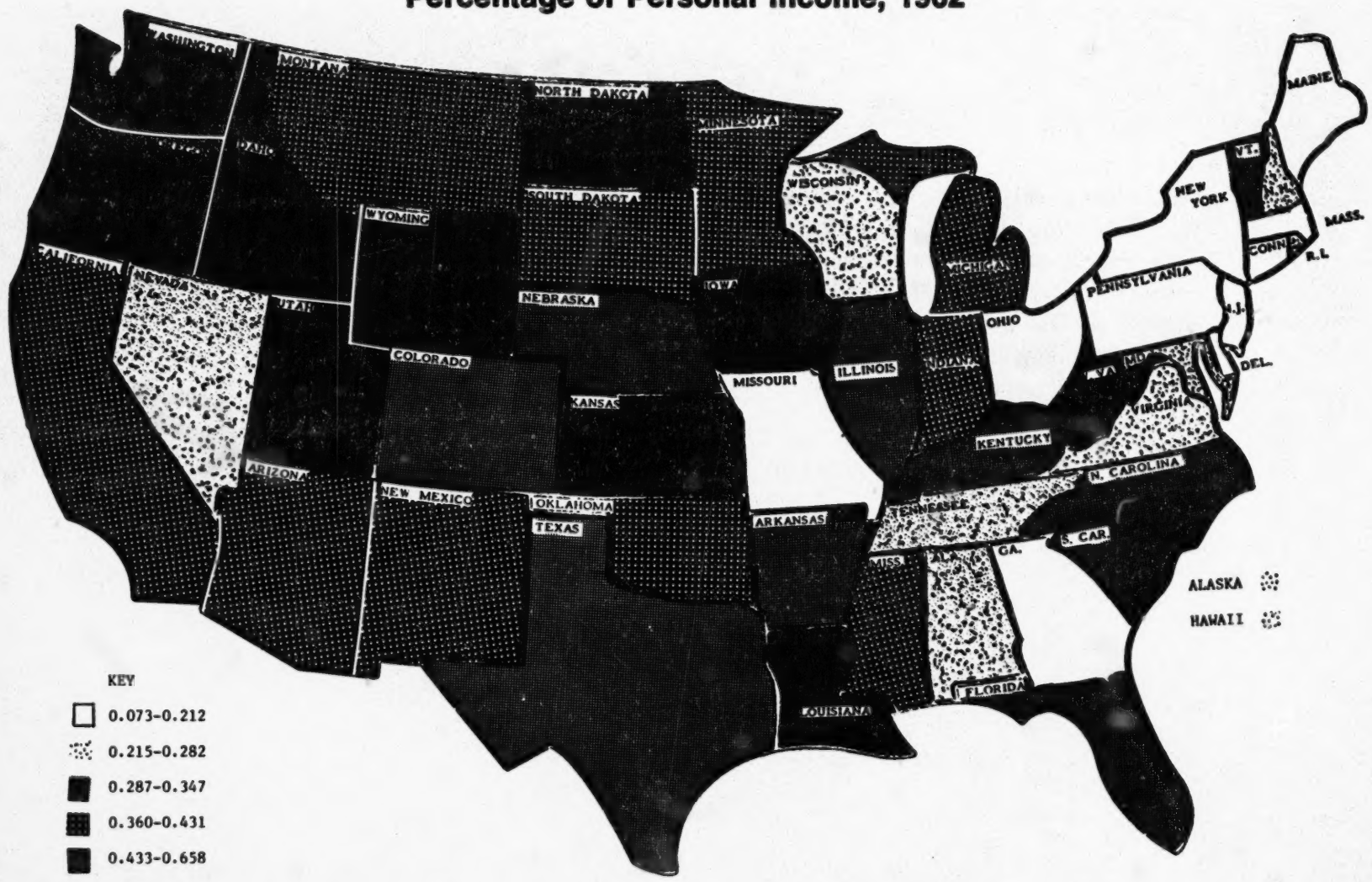
State	1965 current school expenditures	Increased expenditures needed for minimum extensions
Southeast		
Virginia	369.3	65.8
West Virginia	139.5	25.4
Kentucky	208.8	37.4
Tennessee	244.9	44.7
North Carolina	373.1	60.9
South Carolina	176.6	30.3
Georgia	335.9	67.0
Florida	501.6	83.2
Alabama	226.0	45.5
Mississippi	145.5	27.5
Louisiana	287.4	57.4
Arkansas	118.7	22.7
Southwest		
Oklahoma	201.2	38.5
Texas	898.3	191.7
New Mexico	121.5	23.2
Arizona	183.6	33.3
Rocky Mountain		
Montana	79.7	13.0
Idaho	63.6	9.2
Wyoming	44.7	6.8
Colorado	241.0	40.2
Utah	116.2	20.9
Far West		
Washington	344.5	62.6
Oregon	238.0	36.2
Nevada	50.5	9.2
California	2465.2	497.4
Alaska	35.5	5.9
Hawaii	56.3	11.5

In addition to regular day-school programs, schools in 1970 will be asked for extended services—a longer day, a longer week, a longer year. The cost of minimum extensions, say 15 percent, is shown as a figure over and above estimated school expenditures in 1970.

Local School Expenditures from State and Local Funds per $1000 of Personal Income, 1962



State and Local Tax Funds for Student Higher Education as a Percentage of Personal Income, 1962*



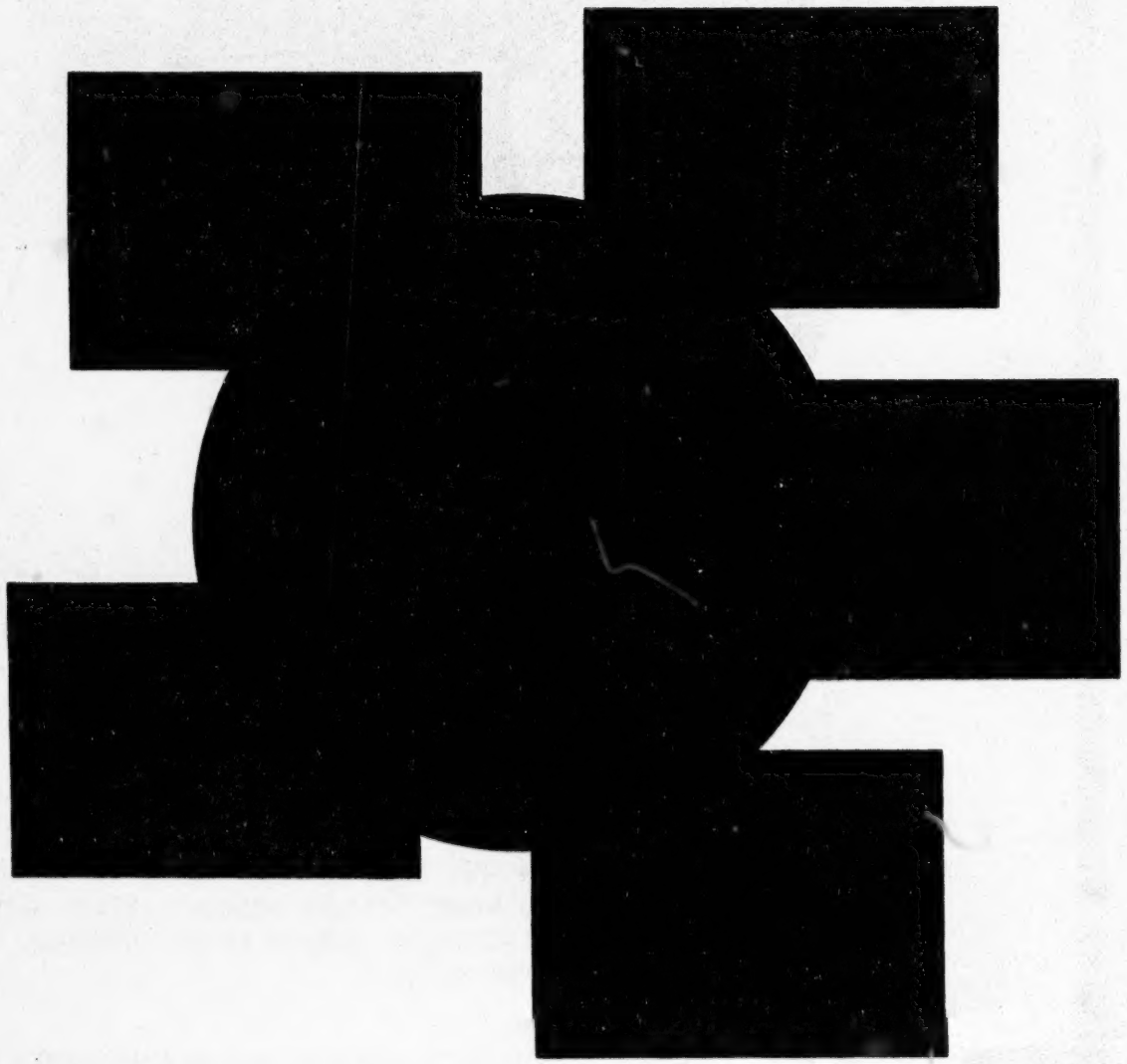
*Student higher education expenditure is defined as the costs of teaching, including that part of "overhead" allocable to teaching.

"Considerations of equity can shape policy in its details, but it is only when humane goals are reinforced by considerations of economy that we may expect fundamental reform to occur. . . . We are now at a juncture in the United States where a concern with the efficient expenditure of public funds will strengthen our commitment to the goal of equal educational opportunity."

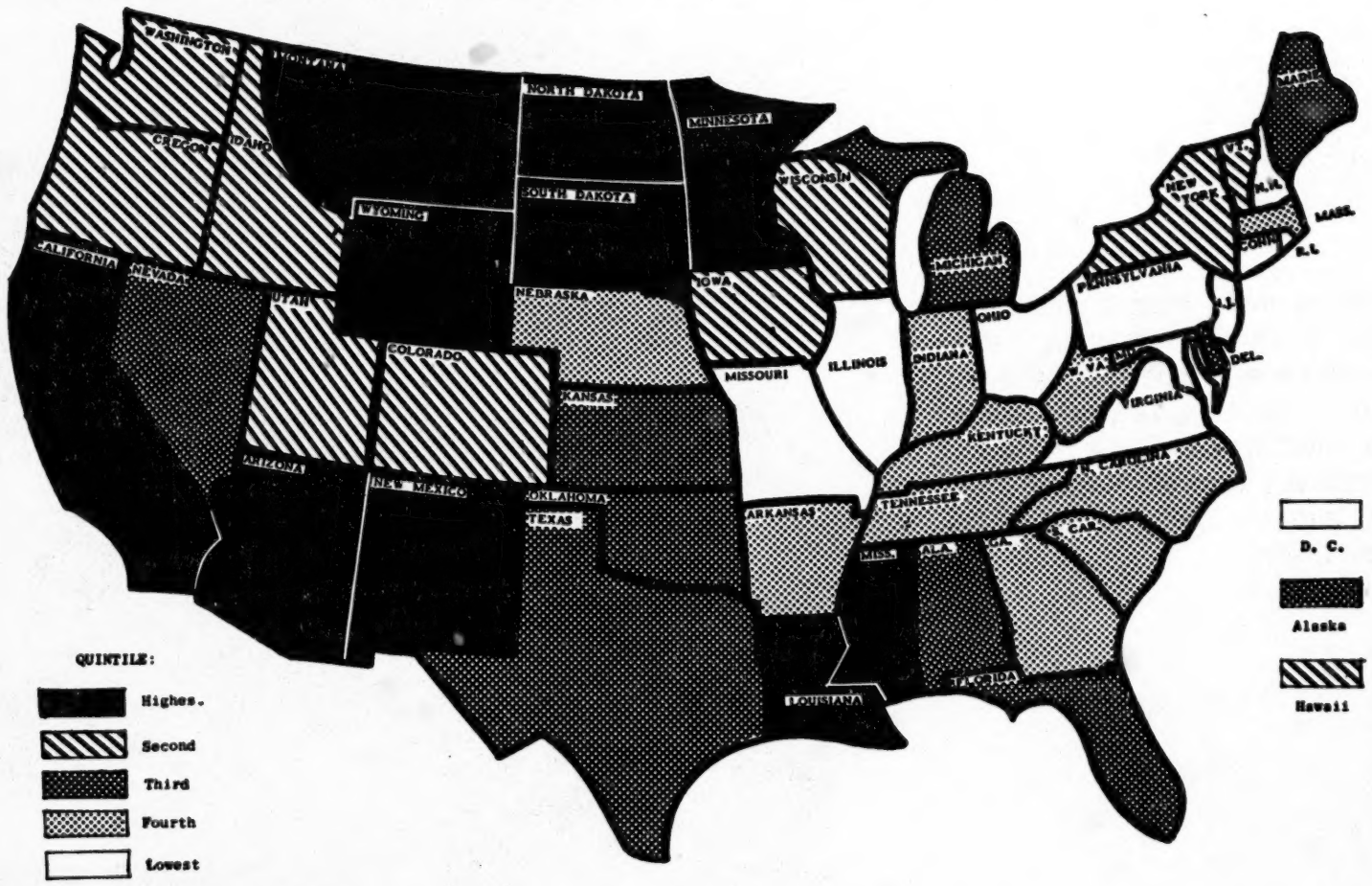
—Charles S. Benson in *The Cheerful Prospect*
(Houghton Mifflin Company, Boston, 1965)

Intellectual Development Is the Sum of Many State Services

Education is more than a classroom function. The programs of many state agencies reinforce and interlock with the public school system in varying degree. Planning the allocation of state resources necessarily involves analysis of these inter-relationships and their effects upon the quality of education.



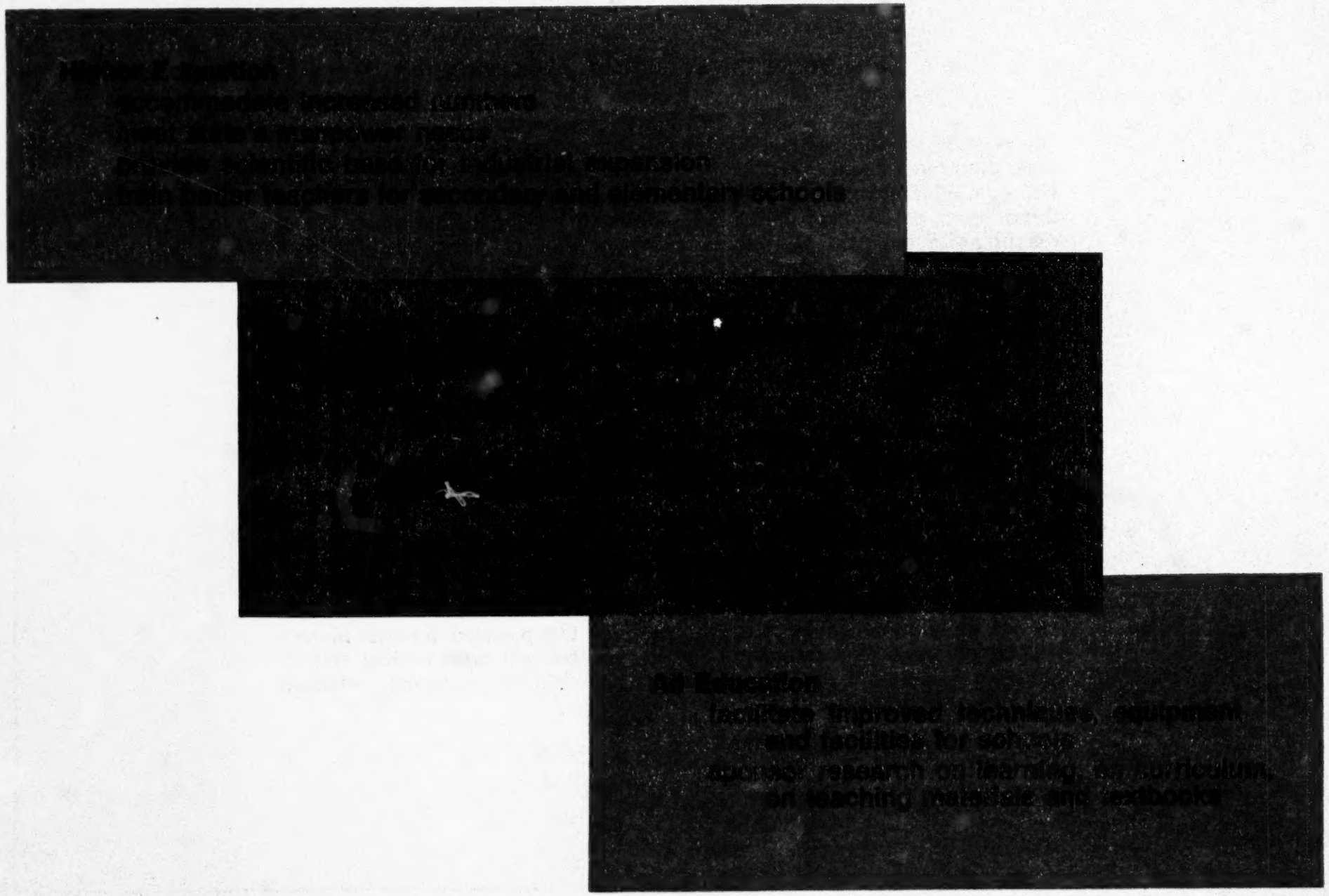
Total Fiscal Effort in the States, 1964-65



In 1964-65, an average of 38.6% of total state expenditures was earmarked for education at all levels. Percentages ranged from 21.9 to 51.1 around the nation.

Increasing and competing demands for state dollars necessitate wise plans and choices.

State Planning for Quality Education—Some Goals


Higher Education
accommodate increased numbers
Secondary and Elementary Education
basic literacy targets for secondary and elementary schools
Adult Education
facilities, improved techniques, equipment and facilities for self-study
applied research on learning, on curriculum, on teaching materials and textbooks

New Tools for Educational Planning

A wide range of analytical tools is becoming available to those who must plan our educational system. These new techniques—systems analysis, cost-effectiveness analysis, program-budgeting, as pioneered in the Department of Defense—hold great promise for the better utilization of resources in the field of education. Though still in their infancy in 'non-technological' applications, these tools, in the long run, should provide much-needed information for decision-makers.

In the immediate future, the direct attempt to analyze the potential directions of education itself will produce benefits. This process—fundamentally research—will encourage:

(1) A clearer thinking through of the goals of education;

(2) The identification of criteria by which one would judge progress in relation to goals;

(3) A systematic exploration of the alternative ways of approaching goals; and

(4) The comparison of the relative effectiveness and resource requirements for different alternatives.

As the planner attempts to carry through this process, a better picture will be obtained of what we do *not* know. This will be a critical step in directing future effort to identify needs and identify potentially effective methods of meeting those needs.

A New Way to View the Educational Process

Fiscal experts are starting to look at education as a production process, somewhat analogous to industry. Economist Jesse Burkhead, Syracuse University, shows the interplay of variable factors in this manner:

INPUT VARIABLES (Land, labor, capital)	PROCESS VARIABLES (Current expenditure policies)	OUTPUT VARIABLES (Benefits to the individual & society)
Student Time —in the classroom —at home —extracurricular Personnel Time —administrative —teaching —clerical —maintenance —auxiliary Materials and Supplies Buildings and Equipment	Class size Size of the school Teacher-pupil ratio Ratio of administrative and clerical personnel to students Use of personnel for guidance or remedial instruction	Increased intellectual curiosity Social adaptation Development of creativity Increase in skills and earning ability Increased lifetime earnings Growth of informed electorate Increased national growth

Prof. Burkhead emphasizes that this illustration does not show the whole range of possible input, process, and output variables. Meaningful measures are not always available, but the planning framework suggested here may be useful in the development and improvement of school programs.

Prof. Burkhead declares that performance budgets prepared by government agencies should describe accomplishments, not just objects of expenditure or "things bought." In this way, local superintendents could make valid program evaluations rather than mere comparisons of expenses over a period of time.

CHOOSING HOW TO SPEND EDUCATIONAL DOLLARS: Some Options and National Costs

Public education expenditures at all levels may reach approximately $45 billion by 1970. This estimate assumes continuation of current effort, enrollments as currently projected, and continuation of program improvements at current rates.

Planning and innovation will be required to achieve the goals of equal educational opportunity and expanded educational services. The approximate costs of some options in 1970 are shown in the accompanying table.

Program Improvement	Approximate 1970 costs in billions
Preventing mental retardation through maternal and child health care in low-income families	$1.5
Child day care centers for low-income families	1.4
Preprimary education for all 3- & 4-year-olds	
—half day	2.3
—full day	5.1
Adding compulsory education two years beyond high school	1.7
Manpower training for 1% of the labor force without compensation for income loss	.9
—with compensation for income loss	6.9
Further extension of school week through after-school-hour and weekend programs	1.0
To raise current expenditure per ADA to 80% of the U. S. average in all states spending less than this	.5
To raise current expenditure per ADA to $500, or 93% of the projected U. S. average in all states spending less than this	1.5

Acknowledgments

EDUCATION IN THE STATES—A Planning Chart Book

was prepared under the direction of Dr. Selma J. Mushkin, director, State and Local Finances Project, The George Washington University. The National Committee for Support of the Public Schools gratefully acknowledges the assistance of Dr. Alan K. Campbell, director, Metropolitan Studies Program, Syracuse University, and Donald P. Mitchell, director, Washington Internships in Education.